REMARKS

This amendment is responsive to the Office Action dated February 27, 2007. Applicant has amended claims 1, 2, 6, 7, 8, 10, 18, 24, 26, 32, 35, 44, 46, 50, 52, 60, 66, 69, 75-78, 86, 92, 94, 100, 103, 109, 112, 120, 128, 130, and 134, and added new claims 138-140. Claims 1-136 and 138-140 are pending.

Interview Summary

Applicant thanks the Examiner for the telephonic interviews dated May 17, 2007 and May 23, 2007. Examiner Hossain and Mr. Kent Sieffert participated in the interview. The Examiner and Mr. Sieffert discussed the claims in view of the cited art (Nair, Francis and Byers).

During the interview, the Applicant and the Examiner reviewed proposed claims substantially similar to claims 1, 138 and 139 recited herein. The Examiner agreed that the proposed amended claim 1 as well as proposed new claims 138 and 139 were patentably distinct from the references of record, including the combination of Nair, Francis and Byers. Applicant agreed to enter an amendment in accordance with the draft claims, at which time the Examiner would perform an updated search if necessary.

The Examiner and the Applicant also discussed that encoding data, as recited in the claims, cover encoding for standard network communication, such as encoding TCP/IP packets. Applicant agreed with this interpretation and has amended certain claims to remove this non-critical requirement.

Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1-136 under 35 U.S.C. 103(a) as being unpatentable over Nair (US 2004/0193900) in view of Byers et al. ("Accessing Multiple Mirror Sites in Parallel: Using Tornado Codes to Speed Up Downloads") further in view of Francis ("Yallcast: Extending the Internet Muticast Architecture"). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Nair

Nair describe a system, business methodology and apparatus for facilitating controlled dissemination of digital works. In paragraph [0009], Nair provides a general background description of peer-to-peer file sharing for transferring digital music files between computers on the Internet. According to Nair, peer-to-peer technology allows one computer to broadcast its list of music files to either a centralized computer that maintains an index of files or broadcast its ability to share files, which other computers on the network, or node of the network, recognize and then build their own index.

Byers

Byers describes a technique by which mirror sites enable client requests to be serviced by any of a number of servers. According to Byers, the mirroring approach deploys multiple servers storing the same data at geographically distributed locations (col. 1, pg. 275, emphasis added). Each of a number of geographically distributed mirror sites would establish a multicast session to distribute information (col. 2, pg. 275). To accelerate the distribution, erasure codes are used to encode the initial file prior to distribution. Byers makes clear that, to enable parallel access to the multiple sites, each of the mirror sites transmit packets from the same encoding (*Id*, emphasis added.). Thus, Byers requires that each mirror site store not only the entire initial file to be distributed but utilize the same encoding for that initial file.

Francis

Francis describes an extended multicast architecture. According to Francis, the core to the yallcast approach is a protocol that utilizes tunnels to form network topologies (pg. 5). Tunnels can either by point-to-point (two-party) using UDP or TCP or N-party for broadcast distribution using multicast (*Id.*).

Claim amendments

Applicant has amended the claims to clarify that the current claims cover situations in which peers that have previously downloaded (or are in the process of downloading) data have

received different portions of the data. That is, that the peers may have received at least some different data. The claim amendments further clarify that the peers send those different portions of the data to aid peers in completing the download of the data. The specific limitations are set forth within the particular claims, as discussed below.

Claims 1-17

Applicant has claim 1 to clarify the differences between Applicant's described data transfer techniques and conventional peer-to-peer networks as well as conventional multicast delivery techniques, as described by the prior art cited by the Examiner.

For example, claim 1 requires sending a first portion of the data to a first computer, and sending a second portion of the data to a second computer, where the second portion includes at least some of the data not downloaded to the first computer. This amendment makes clear that, in claims 1-17, two computers, such as two peer computers, have downloaded at least some different portions of the data.

Amended claim 1 further requires after sending to the first computer and the second computer has commenced, sending a request for the data from a requesting computer to a targeted computer system. Claim 1 recites accessing a look-up list to identify at least the first and second computers that have previously requested the data. In other words, after the first computer and the second computer have received at least the recited first and second portions, a requesting computer sends a request to a targeted computer system. The look-up list is then accessed, either by the target computer system of some other computer (e.g., a computer that tracks the peers), to identify the first computer and the second computer and possibly other computers that have at least commenced downloading the requested data.

Amended claim 1 further requires, prior to receiving all of the data at the first and second computers, sending requests to the identified first and second computers. Claim 1 further requires sending the first portion of the data from the first identified computer to the requesting computer. In other words, the first computer (e.g., a first peer or other computer) that has downloaded a first portion of the data in turn sends the first portion to the requesting computer (e.g., another peer). The first computer may then proceed to download the remaining portions, either from the original source or another peer.

Amended claim 1 also requires sending at least some of the second portion of the data from the second computer to the requesting computer. Thus, the second computer (e.g., a second peer or other computer) has received a second portion of the data that includes at least some data different from the first portion downloaded to the first computer. The second computer sends at least some of this data to the requesting computer (e.g., another peer). The second computer may then proceed to download the remaining portions, either from the original source or another peer.

Amended claim 1 further requires receiving, with the requesting computer, the first portion of the data from the first computer. Claim 1 also requires receiving, with the requesting computer, at least some of the second portion of the data from the second computer, the data received from the second computer including at least some of the data not sent to the first computer. Claim 1 requires saving the data in memory of the requesting computer to recreate the requested data.

Claim 1 is not taught or suggested by Nair in view of Byers and Francis for several reasons.

First, the example embodiment recited by claim 1 requires sending a request for data from a requesting computer to a targeted computer system and, in response, accessing a look-up list to identify the first and second computers that have previously requested the requested data. Nair provides no teaching or suggestion or tracking computers (e.g., peer computers) that have requested data.

At 0009, Nair describes how in conventional peer-to-peer networks in which each computer (peer) broadcasts a respective list of music files to a centralized computer that maintains an index of potential sources for each file. Nair states that each peer "broadcast its list" of files and the central computer maintains an index of files that lists the peers and the files at those peers. The peer computers in Nair broadcast available files, and that information is assembled into a centralized list. There is no teaching or suggestion of a list or other data structure that tracks which computers have requested data.

Second, claim 1 requires sending a first portion of the data to a first computer; sending a second portion of the data to a second computer, where the second portion includes at least some of the data not downloaded to the first computer. Byers describes the use of mirror sites that enable client requests to be serviced by any of a number of mirror sites. (Abstract). According

to Byers, the mirroring approach deploys multiple servers storing the same data at geographically distributed locations (col. 1, pg. 275, emphasis added). Each of a number of geographically distributed mirror sites would establish a multicast session to distribute information (col. 2, pg. 275). To accelerate the distribution, erasure codes are used to encode the initial file prior to distribution. Byers makes clear that, to enable parallel access to the multiple sites, each of the mirror sites transmit packets from the same encoding (*Id*, emphasis added.). Thus, Byers requires that each mirror site store not only the entire initial file to be distributed but utilize the same encoding for that initial file. For at least this reasons, Nair in view of Byers and Francis fail to teach or suggest the elements of claim 1.

Claims 10-17

Applicant has amended independent claim 10 to require that at least two identified peer computers includes a first peer computer that has downloaded at least a first partial portion and a second peer computer that has downloaded at least a second partial portion without downloading all of the first partial portion. Nair in view of Byers and Francis fail to teach at least these elements. For example, as discussed above, Byers requires mirroring servers that store the same data at geographically distributed locations and utilize the same encoding.

Claims 18-25

Claim 18, requires maintaining a list of peer computers that have previously downloaded at least a portion of the data, wherein the list records which partial portions of the data each of the other computers has received. The cited references, even in combination, fail to teach or suggest use of a list that records which portions of the data have been downloaded by the peers.

In addition, Applicant has amended independent claim 18 to require selecting a set of the peer computers based on the record of which partial portions of the requested data each of the peer computers has downloaded, wherein the set of peers includes a first peer computer that has downloaded at least a first partial portion downloaded and a second peer computer that has downloaded at least a second partial portion without downloading the first partial portion. Nair in view of Byers and Francis fail to teach at least these elements. As discussed above, Byers requires mirroring servers that store the same data at geographically distributed locations and

utilize the same encoding. The references to not contemplate sending data from peers that have downloaded different portions of data.

Claims 26-136

For these or other reasons, the cited references fail to establish a prima facie case for non-patentability of Applicant's claims 26-136 under 35 U.S.C. § 103(a) as amended. Withdrawal of these rejections is requested.

New Claims:

Applicant has added new independent claim 138-140 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicant's new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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